

Preliminary Amendment:
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Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1 (original): A method for gasifying a solid material comprising:
a solution preparation step wherein a first solid material is dissolved in a solvent to prepare a gasification solution,
a solvent removal step wherein a second solid material is separated by removing the solvent used to prepare the gasification solution from that solution, and
a solid sublimation step wherein the second solid material is gasified by sublimation.

2 (original): A solid material gasification method as set forth in claim 1, wherein the solvent removal step and the solid sublimation step are carried out sequentially in mutually independent treatment chambers.

3 (original): A solid material gasification method as set forth in claim 2, wherein the treatment chamber of the solvent removal step and the treatment chamber of the following solid sublimation step are arranged separated by an opening and closing partition.

4 (original): A solid material gasification method as set forth in claim 1, wherein the solvent removal step and the solid sublimation step are carried out sequentially in a single treatment chamber.

5 (original): A solid material gasification method as set forth in claim 2, wherein the treatment chambers are composed of closed spaces.

6 (original): A solid material gasification method as set forth in claim 2, wherein the gasification solution is introduced into the treatment chamber in the form of fine droplets, and the solvent is removed within said treatment chamber.

7 (original): A solid material gasification method as set forth in claim 1, wherein the second solid material is adhered to a solid carrier in the form of a fine solid powder in the solvent removal step.

8 (original): A solid material gasification method as set forth in claim 7, wherein the solid carrier is a porous material arranged within the treatment chamber.

9 (original): A solid material gasification method as set forth in claim 8, wherein the porous material is made to move within the treatment chamber according to the progress of the treatment steps.

10 (original): A solid material gasification method as set forth in claim 8, wherein the solid carrier is a porous inner wall of the treatment chamber.

11 (original): A solid material gasification method as set forth in claim 7, wherein the solid carrier is composed of a porous metal material.

12 (original): A solid material gasification method as set forth in claim 7, wherein the solid carrier is composed of a porous ceramic material.

13 (original): A solid material gasification method as set forth in claim 1, wherein the solvent is selectively removed by heating the gasification solution to a temperature required for vaporization of the solvent.

14 (original): A solid material gasification method as set forth in claim 1, wherein the second solid material is sublimated by heating to its sublimation temperature.

15 (original): A solid material gasification method as set forth in claim 1, wherein reactive gas generated by sublimation of the second solid material is transferred to the next treatment step together with a carrier gas.

16 (original): A solid material gasification method as set forth in claim 1, wherein the first solid material is composed of at least one type of organometallic compound.

17 (original): A solid material gasification method as set forth in claim 16, wherein the organometallic compound is selected from the group consisting of Pb(DPM)₂, Zr(DPM)₄, Ti(iPrO)₂(DPM)₂, Ba(DPM)₂, Sr(DPM)₂, Ta(O-Et)₄ and Bi(DPM)₃.

18 (original): An apparatus for gasifying a solid material comprising:

a solvent removal chamber provided with an inlet port of a gasification solvent containing a first solid material and a solvent in which it is dissolved, a heating device that vaporizes the solvent used to prepare the gasification solution by heating that solution, and an exhaust port that removes the vaporization product of the solvent, and

a solid sublimation chamber either also used as the solvent removal chamber or arranged communicably adjacent to it, and provided with a heating device that gasifies a second solid material separated by removal of the solvent by sublimation.

19 (original): An apparatus for gasifying a solid material as set forth in claim 18, wherein the solvent removal chamber and the following solid sublimation chamber are arranged to be separated by an opening and closing partition.

20 (original): An apparatus for gasifying a solid material as set forth in claim 18, wherein the combination solvent removal/solid sublimation chamber is provided with a heating device capable of adjusting the heating temperature to vaporize the solvent used prepare the gasification solution by heating it, and gasify the second solid material by sublimation.

21 (original): An apparatus for gasifying a solid material as set forth in claim 18, wherein the solvent removal chamber and the solid sublimation chamber, or the combination solvent removal/solid sublimation chamber, are respectively composed of closed spaces.

22 (original): An apparatus for gasifying a solid material as set forth in claim 18, wherein the solvent removal chamber or combination solvent removal/solid sublimation chamber is provided with a dissemination means that introduces the gasification solution in the form of fine droplets.

23 (original): An apparatus for gasifying a solid material as set forth in claim 18, wherein the solvent removal chamber or the combination solvent removal/solid sublimation chamber additionally has a carried solid to which the second solid material is adhered in the form of fine solid particles.

24 (original): An apparatus for gasifying a solid material as set forth in claim 23, wherein the solid carrier is a porous material arranged in the solvent removal chamber.

25 (original): An apparatus for gasifying a solid material as set forth in claim 24 additionally having a transport means that moves the porous material from the solvent removal chamber to the solid sublimation chamber.

26 (original): An apparatus for gasifying a solid material as set forth in claim 23, wherein the solid carrier is a porous inner wall of the combination solvent removal/solid sublimation chamber.

27 (original): An apparatus for gasifying a solid material as set forth in claim 23, wherein the solid carrier is composed of a porous metal material.

28 (original): An apparatus for gasifying a solid material as set forth in claim 23, wherein the solid carrier is composed of a porous ceramic material.

29 (original): An apparatus for gasifying a solid material as set forth in claim 18, wherein the solid sublimation chamber or combination solvent removal/solid sublimation chamber is additionally provided with a carrier gas inlet for transferring reactive gas generated by sublimation of the second solid material to a following treatment chamber.

30 (original): An apparatus for gasifying a solid material as set forth in claim 18, wherein the first solid material is composed of at least one type of organometallic compound.

31 (original): An apparatus for gasifying a solid material as set forth in claim 30, wherein the organometallic compound is selected from the group consisting of Pb(DPM)₂, Zr(DPM)₄, Ti(iPrO)₂(DPM)₂, Ba(DPM)₂, Sr(DPM)₂, Ta(O-Et)₄ and Bi(DPM)₃.

32 (original): A process of forming a thin film comprising:

a solution preparation step wherein a first solid material is dissolved in a solvent to prepare a gasification solution,

a solvent removal step wherein a second solid material is separated by removing the solvent used to prepare the gasification solution from that solution,

a solid sublimation step wherein a reactive gas is generated by sublimating the second solid material, and

a film formation step wherein the thin film is deposited on a treated substrate by using the reactive gas as raw material.

33 (currently amended): A process of forming a thin film ~~as set forth in claim 32,~~
comprising:

a solution preparation step wherein a first solid material is dissolved in a solvent to prepare a gasification solution,

a solvent removal step wherein a second solid material is separated by removing the solvent used to prepare the gasification solution from that solution,

a solid sublimation step wherein a reactive gas is generated by sublimating

the second solid material, and

a film formation step wherein the thin film is deposited on a treated substrate
by using the reactive gas as raw material;

wherein the reactive gas is generated by a gasification method described in
any one of claims 2 to 17.

34 (original): An apparatus for forming a thin film from a solid material comprising:
a solvent removal chamber provided with an inlet port of a gasification
solvent containing a first solid material and a solvent in which it is dissolved, a heating device that
vaporizes the solvent used to prepare the gasification solution by heating that solution, and an
exhaust port that removes the vaporization product of the solvent,
a solid sublimation chamber either also used as the solvent removal chamber
or arranged communicably adjacent to it, and provided with a heating device that gasifies a second
solid material separated by removal of the solvent by sublimation, and
a film formation chamber wherein the thin film is deposited on a treated
substrate using as raw material the reactive gas generated from the second solid material in the solid
sublimation chamber or combination solvent removal/solid sublimation chamber.

35 (currently amended): An apparatus for forming a thin film from a solid material as
set forth in claim 34 comprising:

a solvent removal chamber provided with an inlet port of a gasification solvent containing a first solid material and a solvent in which it is dissolved, a heating device that vaporizes the solvent used to prepare the gasification solution by heating that solution, and an exhaust port that removes the vaporization product of the solvent,

a solid sublimation chamber either also used as the solvent removal chamber or arranged communicably adjacent to it, and provided with a heating device that gasifies a second solid material separated by removal of the solvent by sublimation, and

a film formation chamber wherein the thin film is deposited on a treated substrate using as raw material the reactive gas generated from the second solid material in the solid sublimation chamber or combination solvent removal/solid sublimation chamber;

said apparatus being provided with a gasification apparatus as set forth in any one of claims 19 to 31.